

BEST AVAILABLE COPY**REMARKS**

The Office Action mailed December 8, 2004 has been received and carefully noted. The following remarks are submitted as a full and complete response thereto. Claims 1, 4-9 and 11-12 are pending in the present application and are respectfully submitted for reconsideration.

No extension of time is believed to be required based upon the filing of this Response prior to the deadline of the three-month statutory period (i.e., March 8, 2005). Authorization is granted to charge counsel's **Deposit Account No. 01-2300**, referencing **Attorney Docket No. 101201-00020**, for any additional fees necessary for entry of this Response.

Claims 1, 4-9, 11 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Watanabe et al. patent (U.S. Patent No. 5,767,806) in view of the Kobayakawa et al. patent (U.S. Patent No. 6,058,318). Dependent claims 4-8 and 11-12 depend from independent claims 1 and 9, respectively. The rejections of these claims are respectfully traversed and reconsideration is requested.

Independent claim 1 recites an adaptive array apparatus that includes a plurality of radio units that each has a transmitting unit, a receiving unit, and an antenna, the adaptive array apparatus comprising storing means for storing a separate compensation value for each radio unit, each compensation value reflecting phase propagation characteristics of the receiving unit and the transmitting unit in the corresponding radio unit; compensating means for compensating, for each radio unit, a phase amount used when generating a directivity pattern for an output signal by adding the compensation value corresponding to the radio unit to the phase amount; and generating means for generating the compensation value for each radio unit in accordance with the phase propagation characteristics of the receiving unit and the transmitting unit in the radio unit, wherein the generating means includes: a generating unit for generating test signals; a

first detecting unit for detecting, when a test signal passes the transmitting unit in a radio unit, a first phase shift value for the radio unit; a second detecting unit for detecting, when the test signal passes the transmitting unit and the receiving unit in order in the radio unit, a second phase shift value for the radio unit; and a calculating unit for calculating a phase shift difference between the receiving unit and the transmitting unit in a radio unit using the first phase shift value and the second phase shift value of the radio unit, and for setting the calculated phase shift difference as the compensation value for the radio unit. Independent claim 9 recites a compensation method for use in an adaptive array apparatus of the same. It is respectfully submitted that the alleged combination of the Watanabe et al. patent and the Kobayakawa et al. patent does not disclose or suggest the adaptive array apparatus and compensation method, as claimed in the present invention.

As acknowledged by the Examiner, the Watanabe et al. patent "fails to disclose generating means including: a generating unit for generating test signals; first and second detecting units for detecting when the test signal passes the transmitting unit (a first phase shift value) and a second phase shift value, respectively and a calculating means for calculating a phase shift difference between the receiving unit and the transmitting unit using both the first and second phase shift value and for setting the calculated phase shift difference as the compensation value for the radio unit", as claimed in the present invention. However, the Examiner proceeded to rely on the Kobayakawa et al. patent as disclosing such features, and that "it would have been obvious to one of ordinary skill in the art to modify the Watanabe et al. patent to include a required phase compensation amount for the purpose of enhancing the beam forming efficiency".

With reference to Fig. 3, the Kobayakawa et al. patent appears to disclose a radio base station in a cellular mobile communication system comprising, in pertinent part, a plurality of receivers 4-n provided correspondingly to the antenna elements 2-n for extracting a desired

frequency component from a signal received by the antenna elements 2-n directed to a same sector and then frequency-converting the extracted component to a predetermined band; a beam former 6 for forming a desired beam pattern on the basis of the output signals of the receivers directed to each sector, wherein one reference antenna element out of the plurality of antenna elements directed to the same sector is set as a first antenna element 2-1, one receiver for frequency-converting the signal received by the first antenna element is set as a first receiver 4-1, any antenna element different from the first antenna element is set as a second antenna element 2-n, and the receiver for frequency-converting the signal received by the second antenna element is set as a second receiver 4-n; phase compensation calculating means 8-n for calculating, in response to the outputs of the first and second receivers relative to a specific up-signal, a required phase compensation amount which represents the difference phase amount between the output-signal phase difference of the first and second receivers and the input-signal phase difference of the first and second receivers; and phase compensating means 10-n for correcting the phase of the output signal of the second receiver 4-n on the basis of the phase compensation amount. (col. 2, ls. 27-51; col. 6, ls. 15-64)

In contrast to the Kobayakawa et al. patent, the present invention discloses an adaptive array apparatus comprising, in pertinent part, generating means for generating the compensation value for each radio unit in accordance with the phase propagation characteristics of the receiving unit and the transmitting unit in the radio unit, wherein the generating means includes a generating unit for generating test signals; a first detecting unit for detecting, when a test signal passes the transmitting unit in a radio unit, a first phase shift value for the radio unit; a second detecting unit for detecting, when the test signal passes the transmitting unit and the receiving unit in order in the radio unit, a second phase shift value for the radio unit; and a calculating unit for calculating a phase shift difference between the receiving unit and the transmitting unit in a

radio unit using the first phase shift value and the second phase shift value of the radio unit, and for setting the calculated phase shift difference as the compensation value for the radio unit. Such is neither disclosed nor suggested by the Kobayakawa et al. patent. Accordingly, the Kobayakawa et al. patent also does not disclose or suggest the adaptive array apparatus and compensation method, as claimed.

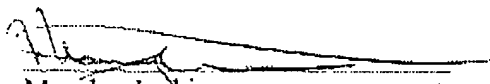
Since neither the Watanabe et al. patent nor the Kobayakawa et al. patent discloses the adaptive array apparatus and compensation method of the present invention, it is submitted that the alleged combination of these references also does not disclose or suggest the present invention, as claimed. Nor even if the references were combinable, as suggested, would such alleged combination result in the claimed invention. It is therefore submitted that the references, either alone or in alleged combination, fail to disclose or suggest the adaptive array apparatus and compensation method, as claimed. Based upon the forgoing, it is respectfully submitted that independent claims 1 and 9 are patentable and in condition for allowance. Reconsideration is respectfully requested.

It is further submitted that dependent claims 4-8 and 11-12 are also patentable and in condition for allowance due to their dependency upon independent claims 1 and 9, respectively, since the dependent claims differ in scope from the corresponding parent claims. Dependent claims 4-8 depend from independent claim 1 and dependent claims 11-12 depend from independent claim 9, and thus are further limited to additional features of the invention. Therefore, it is respectfully submitted that the dependent claims are patentable over the alleged combination of the Watanabe et al. patent and the Kobayakawa et al. patent for at least the reasons set forth above with respect to independent claims 1 and 9. Reconsideration is requested.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact the Applicant's undersigned attorney at the telephone number, indicated below, to arrange for an interview to expedite the disposition of this application.

Date: March 4, 2005

Respectfully submitted,



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